

Please insert the following paragraph after the claims section:

Abstract of the Disclosure

A system for separating biological fluids into components, comprises a set of containers for the biological fluid to be separated and the separated components, optionally an additional container for additive solution, and a hollow centrifugal processing chamber having an axial inlet/outlet for the biological fluid. The processing chamber contains a piston movable to intake a selected quantity of biological fluid and express processed biological fluid components via the outlet. Optical means monitor the position of piston to control the amount of intaken fluid and the expression of components. A distribution valve arrangement selectively communicates the processing chamber and the containers or places them out of communication. The system is arranged to operate in a separation mode and in a non-separation transfer mode, especially for adding preservative solution to separated blood stem cells.